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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,380	06/23/2003	Chien-Li Hung	251210-1350	7962

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EXAMINER

DANIELSEN, NATHAN ANDREW

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/601,380	<b>Applicant(s)</b> HUNG ET AL.	
	<b>Examiner</b> Nathan Danielsen	<b>Art Unit</b> 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-18 have been examined.

#### *Priority*

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### *Specification*

3. The disclosure is objected to because of the following informalities: the examiner suggests that the following exemplary phrases "The prevailing type of optical is the optical disc of..." (page 1, line 24), "by Hall sensor" (page 2, line 15), and "the angle acceleration" (page 5, lines 2, 6-7, and 11-12) be changed to --The prevailing type of optical disc is the optical disc of...--, --by a Hall sensor--, and --the angular acceleration--. Appropriate correction is required.

Additionally, the examiner respectfully requests that Applicant carefully review the specification to determine and correct any other informalities that may be found therein.

#### *Claim Objections*

4. Claim 4 is objected to because of the following informalities: the examiner suggests that the phrase "measured by Hall sensor" be changed to --measured by a Hall sensor--.

Appropriate correction is required.

#### *Claim Rejections - 35 USC § 102*

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 5-11, and 13-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (hereinafter Kim) (US Patent Application Publication 2003/0103430).

Regarding claims 1 and 10, Kim discloses a method (and associated apparatus) of detecting a type of an optical disc according to a rotation speed of a spindle motor loading the optical disc, comprising the following steps:

- (a) driving the spindle motor ("the controller 17 applies a driving voltage to the spindle motor 14 for a predetermined time  $T_c$  through driving unit 16" (¶ 8, lines 2-4 and figure 1));
- (b) detecting the rotation speed of the spindle motor after a predetermined period ("the controller 17 counts a number of pulses in the FG signal input for the duration of the time  $T_c$ " (¶ 9, lines 5-6 figure 1)); and
- (c) comparing the rotation speed of the spindle motor with a plurality of predetermined rotation speeds to determine the type of optical disc loaded on the spindle motor ("the controller 17 counts a number of pulses in the FG signal input for the duration of the time  $T_c$  and compares this counted value with two references  $T_{NL}$  and  $T_{NH}$ " (¶ 9, lines 5-6 and figure 1)).

Regarding claims 2 and 11, Kim discloses the method of detecting a type of an optical disc as claimed in claim 1, wherein the spindle motor is driven by a voltage having a predetermined waveform ("the controller 17 applies a driving voltage to the spindle motor 14" (¶ 8, lines 2-3 and figure 1)).

Regarding claims 5 and 13, Kim discloses the method of detecting a type of an optical disc as claimed in claim 1, wherein no optical disc in the spindle motor is determined when the rotation speed of the spindle motor is higher than the predetermined rotation speeds ("If the counted value is greater than  $T_{NH}$ , the controller 17 judges that there is no disk" (¶ 9, lines 8-9)).

Regarding claims 6 and 14, Kim discloses the method of detecting a type of optical disc as claimed in claim 1, wherein the predetermined rotation speeds at least comprise a first

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predetermined rotation speed ( $T_{NL}$  in ¶ 9) and a second predetermined rotation speed ( $T_{NH}$  in ¶ 9).

Regarding claims 7 and 15, Kim discloses the method of detecting a type of an optical disc as claimed in claim 6, wherein the type of the optical disc is determined as an 8 cm optical disc when the rotation speed of the spindle motor is between the first predetermined rotation speed and the second predetermined rotation speed ("If the counted value is between  $T_{NH}$  and  $T_{NL}$ , it judges that the placed disk is a 8 cm disk." (¶ 9, lines 9-11)).

Regarding claims 8 and 16, Kim discloses the method of detecting a type of an optical disc as claimed in claim 6, wherein the type of the optical disc is determined as a 12 cm optical disc when the rotation speed of the spindle motor is slower than the second predetermined rotation speed ("If the counted value is smaller than  $T_{NL}$ , then it judges the placed disk is a 12 cm disk." (¶ 9, lines 11-12)).

Regarding claims 9 and 17, Kim discloses the method of detecting a type of an optical disc as claimed in claim 6, wherein the first predetermined rotation speed is slower than the second predetermined rotation speed ( $T_{NL} < T_{NH}$  (¶ 9, line 8)).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Official Notice.

Regarding claims 3 and 12, Kim discloses everything claimed as applied to claims 2 and 11. However, Kim fails to disclose where the predetermined waveform comprises a higher

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voltage level in a first period to overcome static friction of the spindle motor, and a lower voltage level in a second period to drive the rotating spindle motor.

Official Notice is taken that both the concept and advantages of providing a higher startup voltage to a spindle motor are well known and expected in the art. It would have been obvious to provide additional energy to the motor windings during an initial period so as to overcome the effects of static friction, thereby not wasting additional energy in slowly starting the motor.

8. Claims 4 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Harata (US Patent 6,944,108).

Regarding claims 4 and 18, Kim discloses everything claimed as applied to claims 4 and 10 respectively. However, Kim fails to disclose where the rotation speed of the spindle motor is measured by Hall sensor.

In the same field of endeavor, Harata discloses where the rotation speed of the spindle motor is measured by Hall sensor (The Hall elements send sine wave signals to a CPU after converting them into pulses. These pulses are then counted for the duration of a measuring time, which the CPU converts into a rotational frequency. (col. 3, line 61 through col. 4, line 2)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a Hall sensor to measure the spindle speed of a spindle motor, as taught by Harata, for the purpose of determining the size and shape of an optical disc (col. 2, lines 4-10))

### **Conclusion**

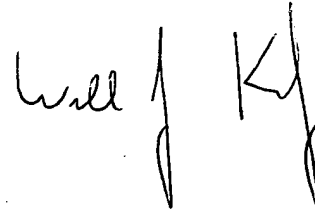
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571) 272-4248. The examiner can normally be reached on Monday-Friday, 8:30 AM - 4:30 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nathan Danielsen  
12/09/2005

A handwritten signature in black ink, appearing to read 'William Klimowicz', with a stylized 'K' and 'W'.

WILLIAM KLIMOWICZ  
PRIMARY EXAMINER